

the percussion signal output means being a cable lead wire electrically connected to the laser light transmitter for transmitting the percussion signal to the laser light transmitter, wherein

the laser light transmitter receives and converts the percussion signal to a digital signal so as to shoot a laser light based on the converted signal and simulate that a target has been hit if the shot laser light is incident to a detecting element mounted on the target.

56. (Currently Amended) A gun simulation system, comprising:

percussion signal generation means for generating a percussion signal when a trigger of a gun is pulled;

percussion signal output means for outputting the generated percussion signal;

a housing ~~of a magazine~~ inserted and fixed into a magazine insertion section of the gun, and the housing has to have any one shape of a magazine, a cartridge or a bomb shell; and

a laser light transmitter attached to the gun for shooting a laser light toward a target, wherein

the percussion signal output means generates a wireless percussion signal to be wirelessly transmitted to the laser light transmitter,

the laser light transmitter receives and converts the wireless percussion signal to a digital signal so as to shoot a laser light based on the converted signal and simulate that a target has been hit if the shot laser light is incident to a detecting element mounted on the target.

REMARKS

Claims 1-56 are currently pending in the application with Claims 1, 15, 29, 45 and 54-56 being the independent claims. Claims 1-28 are currently withdrawn from consideration.

The Examiner objected to FIGs. 2 and 3 for failing to comply with 37 C.F.R. 1.84(p)(5). The Examiner objected to the Specification, specifically the Abstract, for being in improper format. The Examiner rejected Claims 36 and 37 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Examiner rejected Claims 29-44 and 54 under § 112, second paragraph, as being indefinite. The Examiner rejected Claims 36 and 37 as failing to comply with the requirements of § 112, sixth paragraph. The Examiner rejected Claims 29, 31-34, 38-40, 42, 43 and 54 under 35 U.S.C. § 103(a) as being unpatentable over Bartsch (U.S. Pub. No. 2003/0195046) in view of Dawson (U.S. Pat. No. 4,416,631). The Examiner rejected Claims 30, 36 and 37 under § 103(a) as being unpatentable over Bartsch in view of Dawson and further in view of Trabut (U.S. Pat. No. 6,257,893). The Examiner rejected Claim 35 under § 103(a) as being unpatentable over Bartsch in view of Dawson and further in view of Gallagher (U.S. Pat. No. 4,624,641). The Examiner rejected Claim 41 under § 103(a) as being unpatentable over Bartsch in view of Dawson and further in view of Nadel (U.S. Pub. No. 2005/0016514). The Examiner rejected Claims 45, 48, 50 and 51 under § 103(a) as being unpatentable over Dawson in view of Bartsch. The Examiner rejected Claims 46, 47 and 53 under § 103(a) as being unpatentable over Dawson in view of Bartsch and further in view of Rayan (U.S. Pat. No. 3,331,606). The Examiner rejected Claim 49 under § 103(a) as being unpatentable over Dawson in view of Bartsch and further in view of Nadel. The Examiner rejected Claims 52, 55 and 56 under § 103(a) as being unpatentable over Dawson in view of Bartsch and further in view of Cheshelski (U.S. Pat. No. 5,842,300).

Regarding the objection to FIGs. 2 and 3, the Examiner contends that reference character "23" is not discussed in the Specification. As indicated above, FIGs. 2 and 3 have been amended to delete reference character "23."

Regarding the objection to FIGs. 2 and 4, the Examiner contends that reference characters “13” and “30” refer to the same element. However, the Specification, at page 14, line 15, indicates that FIG. 2 illustrates a conventional detecting element while FIG. 4 illustrates a detecting element according to an embodiment of the present invention. Thus, reference characters “13” and “30” do not refer to the same element. Accordingly, it is submitted that the objection should be withdrawn.

Regarding the objection to the Abstract of the Specification, the Examiner contends that the Abstract should not exceed 150 words and should avoid the form and legal phraseology of patent claims. As indicated above, the Abstract has been amended to conform to the requirements of 37 C.F.R. 1.72(b). Accordingly, it is submitted that the objection should be withdrawn.

Regarding the rejection of Claims 36 and 37 under § 112, first paragraph, the Examiner contends that the claims fail to comply with the enablement requirement. Specifically, the Examiner contends that the Specification describes the shape of the “supporting means” but does not describe what the “supporting means” is.

As described in MPEP § 2164.01, the standard for determining whether the specification meets the enablement requirement is whether the experimentation needed to practice the invention is undue. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). According to *In re Bowen*, 492 F.2d 859, 862-63, 181 USPQ 48, 51 (CCPA 1974), the minimal requirement is for the examiner to give reasons for the uncertainty of the enablement.

The Examiner contends that one of ordinary skill would not know what type of elements (or materials) would correspond to the supporting means. However, the test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue. *In re Angstadt*, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976). Thus, although one of ordinary skill may have to conduct some experimentation to determine a suitable material for the supporting means, it is submitted that the experimentation would not be undue. Accordingly, it is submitted that Claims 36 and 37 are fully enabled by the Specification and the rejection should be withdrawn.

Regarding the rejection of Claims 29-44 and 54 under § 112, second paragraph, the Examiner contends that the claims are indefinite for failing to particularly point out

and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner contends that Claims 29 and 54 recite “the detecting element”, which lacks antecedent basis. As indicated above, Claims 29 and 54 have been amended to recite “a detecting element.” Accordingly, it is submitted that the rejection should be withdrawn.

Further, the Examiner contends that the term “MILES” is an abbreviation that must be defined at least once in a claim where it first appears. As indicated above, Claim 35 has been amended to recite a “Multiple Integrated Laser Engagement System (MILES).” Accordingly, it is submitted that the rejection should be withdrawn.

Regarding the rejection of Claims 36 and 37 under § 112, sixth paragraph, the Examiner contends that the written description fails to clearly link or associate the disclosed structure, material or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function of “supporting means of a band shape for supporting the piezoelectric element by surrounding a periphery of the trigger”, as recited by Claims 36 and 37.

The Specification clearly describes the corresponding structure that performs the claimed function on page 36, line 6, through page 38, line 3. Specifically, FIGs. 23 and 24 illustrate the structure of supporting means 104 as it relates to trigger 101 and piezoelectric element 102. Thus, the written description clearly links or associates the disclosed structure to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function. Accordingly, it is submitted that the rejection under § 112, sixth paragraph, should be withdrawn.

Regarding the § 103(a) rejection of Claim 29, the Examiner contends that each element of the claim is taught, suggested or rendered obvious by the combination of Bartsch and Dawson. More specifically, the Examiner contends that Bartsch teaches or suggests each element of Claim 29 with the exception of shooting mode designation means for designating a shooting mode. The Examiner cites Dawson in an attempt to remedy these deficiencies.

Bartsch discloses a target shooting system including shooting components that simulate shots by emitting radiation having a predetermined frequency, and target systems that detect if the radiation impinges on the target. Specifically, Bartsch describes

that the shooting component includes a trigger detector mounted to the housing to detect movement of the trigger. Thus, Bartsch discloses a trigger detector based on movement of the trigger, but fails to disclose percussion signal generation means for generating a percussion signal when a trigger of a gun is pulled, as recited by Claim 29 and depicted in FIGs. 22 and 23. Further, Dawson does not cure the deficiencies of Bartsch. Accordingly, Bartsch and Dawson fail to teach or suggest the recitations of Claim 29 and it is submitted that Claim 29 is patentable over the combination of Bartsch and Dawson.

Regarding the § 103(a) rejection of Claim 45, the Examiner contends that each element of the claim is taught, suggested or rendered obvious by the combination of Dawson and Bartsch. More specifically, the Examiner contends that Dawson teaches or suggests each element of Claim 29 with the exception of shooting a laser light from a laser light transmitter attached to a gun barrel by pulling a trigger of a gun and simulating a hit of a target bearing a detecting element. The Examiner cites Bartsch in an attempt to remedy these deficiencies.

Dawson discloses a small arms firing effects simulator, which is integrated with a magazine of a weapon. Specifically, Dawson describes that a trigger interface 20 utilizes a resistor 202, a capacitor 203, a Schmitt trigger 204 and a dome switch 205, and, when a fall in voltage is detected by the Schmitt trigger 204, the output of the Schmitt trigger 204 goes high. Thus, Dawson discloses a trigger interface based on the drop in voltage caused by the movement of a trigger, but fails to disclose percussion signal input means for receiving a percussion signal generated by pulling of a trigger of the gun, as recited by Claim 45. Further, Bartsch does not cure the deficiencies of Dawson. Accordingly, Dawson and Bartsch fail to teach or suggest the recitations of Claim 45 and it is submitted that Claim 45 is patentable over the combination of Dawson and Bartsch.

Regarding the § 103(a) rejection of Claim 54, the Examiner asserts the same argument as applied to Claim 29. Accordingly, for at least the above reasons, Bartsch fails to teach or suggest the recitations of Claim 54 and it is submitted that Claim 54 is patentable over a combination of Bartsch and Dawson.

Regarding the § 103(a) rejection of Claim 55, the Examiner contends that each element of the claim is taught, suggested or rendered obvious by the combination of Bartsch and Cheshelski. More specifically, the Examiner contends that Bartsch teaches or

suggests each element of Claim 55 with the exception of the laser light transmitter receives and converts the percussion signal to a digital signal so as to shoot a laser light based on the converted signal. The Examiner cites Cheshelski in an attempt to remedy this deficiency.

The Examiner asserts Bartsch using the same argument as applied to Claim 29. Accordingly, for at least the above reasons, Bartsch fails to teach or suggest the recitations of Claim 55. Further, Cheshelski does not cure the deficiencies of Bartsch. Therefore, it is submitted that Claim 55 is patentable over the combination of Bartsch and Cheshelski.

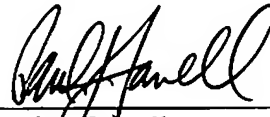
Regarding the § 103(a) rejection of Claim 56, the Examiner contends that each element of the claim is taught, suggested or rendered obvious by the combination of Bartsch and Cheshelski. More specifically, the Examiner contends that Bartsch teaches or suggests each element of Claim 56 with the exception of the percussion signal output means generates a wireless percussion signal to be wirelessly transmitted to the laser light transmitter and the laser light transmitter receives and converts the wireless percussion signal to a digital signal so as to shoot a laser light based on the converted signal. The Examiner cites Cheshelski in an attempt to remedy these deficiencies.

The Examiner asserts Bartsch using the same argument as applied to Claim 29. Accordingly, for at least the above reasons, Bartsch fails to teach or suggest the recitations of Claim 56. Further, Cheshelski does not cure the deficiencies of Bartsch. Therefore, it is submitted that Claim 56 is patentable over a combination of Bartsch and Cheshelski.

Regarding Claims 29-44 and 46-53, while not conceding the patentability of the dependent claims, *per se*, we believe Claims 29-44 and 46-53 are also patentable for at least the above reasons. Accordingly, we believe that Claims 29-56 are allowable over a Bartsch and Dawson, alone or in combination with Cheshelski, and the rejections under 35 U.S.C. § 103(a) should be withdrawn.

Therefore, in view of the amendments and remarks herein, Claims 29-56 are believed to represent a patentable departure from the cited art and are in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, it is requested that the Examiner contact Applicants' attorney at the number given below.

Respectfully submitted,



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